

Exercise 3.1

Hint: Remember, you can always draw a Venn diagram to help you.

Q2d) Hint: You have all the information you need to use the addition law, replacing B with B'.

- Q1 If $P(A) = 0.3$, $P(B) = 0.5$ and $P(A \text{ and } B) = 0.15$, find:
- a) $P(A')$ b) $P(A \text{ or } B)$ c) $P(A' \text{ and } B')$
- Q2 If $P(A) = 0.36$, $P(B) = 0.44$ and $P(A \text{ and } B) = 0.27$, find:
- a) $P(B')$ b) $P(A \text{ or } B)$ c) $P(A \text{ and } B')$ d) $P(A \text{ or } B')$
- Q3 A car is selected at random from a car park. The probability of the car being blue is 0.25 and the probability of it being an estate is 0.15. The probability of the car being a blue estate is 0.08.
- a) What is the probability of the car not being blue?
 - b) What is the probability of the car being blue or being an estate?
 - c) What is the probability of the car being neither blue nor an estate?
- Q4 If $P(X \text{ or } Y) = 0.77$, $P(X) = 0.43$ and $P(Y) = 0.56$, find:
- a) $P(Y')$ b) $P(X \text{ and } Y)$
 - c) $P(X' \text{ and } Y')$ d) $P(X' \text{ or } Y')$
- Q5 If $P(C' \text{ or } D) = 0.65$, $P(C) = 0.53$ and $P(D) = 0.44$, find:
- a) $P(C' \text{ and } D)$ b) $P(C' \text{ and } D')$
 - c) $P(C' \text{ or } D')$ d) $P(C \text{ and } D)$
- Q6 The probability that a student has read 'To Kill a Mockingbird' is 0.62. The probability that a student hasn't read 'Animal Farm' is 0.66. The probability that a student has read at least one of these two books is 0.79. Find:
- a) The probability that a student has read both the books.
 - b) The probability that a student has read 'Animal Farm' but hasn't read 'To Kill a Mockingbird'.
 - c) The probability that a student has read neither of the books.